

SEQUENCE LISTING

<110> Gerald, Christophe P.G.
 Jones, Kenneth A.
 Bonini, James A.
 Borowsky, Beth E.
 Craig, Douglas A.

<120> DNA Encoding Mammalian Neuropeptide FF (NPFF) Receptors
 And Uses Thereof

<130> 57155-D/JPW

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<150> 09/405,558

<151> 1999-09-24

<150> 09/255,368

<151> 1999-02-22

<150> 09/161,113

<151> 1998-09-25

<160> 71

<170> PatentIn Ver. 2.1

<210> 1

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<212> DNA

<213> Rattus norvegicus

<400> 1

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<212> PRT

<213> Rattus norvegicus

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Gln Asn Gly Ser Asp Val Glu Thr Ser Met Ala Thr Ser Leu Thr Phe
 20 25 30

Ser Ser Tyr Tyr Gln His Ser Ser Pro Val Ala Ala Met Phe Ile Ala
 35 40 45

Ala Tyr Val Leu Ile Phe Leu Leu Cys Met Val Gly Asn Thr Leu Val
 50 55 60

Cys Phe Ile Val Leu Lys Asn Arg His Met Arg Thr Val Thr Asn Met
 65 70 75 80

Phe Ile Leu Asn Leu Ala Val Ser Asp Leu Leu Val Gly Ile Phe Cys
 85 90 95

Met Pro Thr Thr Leu Val Asp Asn Leu Ile Thr Gly Trp Pro Phe Asp
 100 105 110

Asn Ala Thr Cys Lys Met Ser Gly Leu Val Gln Gly Met Ser Val Ser
 115 120 125

Ala Ser Val Phe Thr Leu Val Ala Ile Ala Val Glu Arg Phe Arg Cys
 130 135 140

Ile Val His Pro Phe Arg Glu Lys Leu Thr Leu Arg Lys Ala Leu Phe
 145 150 155 160

Thr	Ile	Ala	Val	Ile	Trp	Ala	Leu	Ala	Leu	Leu	Ile	Met	Cys	Pro	Ser	165	170	175
Ala	Val	Thr	Leu	Thr	Val	Thr	Arg	Glu	Glu	His	His	Phe	Met	Leu	Asp	180	185	190
Ala	Arg	Asn	Arg	Ser	Tyr	Pro	Leu	Tyr	Ser	Cys	Trp	Glu	Ala	Trp	Pro	195	200	205
Glu	Lys	Gly	Met	Arg	Lys	Val	Tyr	Thr	Ala	Val	Leu	Phe	Ala	His	Ile	210	215	220
Tyr	Leu	Val	Pro	Leu	Ala	Leu	Ile	Val	Val	Met	Tyr	Val	Arg	Ile	Ala	225	230	235
Arg	Lys	Leu	Cys	Gln	Ala	Pro	Gly	Pro	Ala	Arg	Asp	Thr	Glu	Glu	Ala	245	250	255
Val	Ala	Glu	Gly	Gly	Arg	Thr	Ser	Arg	Arg	Arg	Ala	Arg	Val	Val	His	260	265	270
Met	Leu	Val	Met	Val	Ala	Leu	Phe	Phe	Thr	Leu	Ser	Trp	Leu	Pro	Leu	275	280	285
Trp	Val	Leu	Leu	Leu	Leu	Ile	Asp	Tyr	Gly	Glu	Leu	Ser	Glu	Leu	Gln	290	295	300
Leu	His	Leu	Leu	Ser	Val	Tyr	Ala	Phe	Pro	Leu	Ala	His	Trp	Leu	Ala	305	310	315
Phe	Phe	His	Ser	Ser	Ala	Asn	Pro	Ile	Ile	Tyr	Gly	Tyr	Phe	Asn	Glu	325	330	335
Asn	Phe	Arg	Arg	Gly	Phe	Gln	Ala	Ala	Phe	Arg	Ala	Gln	Leu	Cys	Trp	340	345	350
Pro	Pro	Trp	Ala	Ala	His	Lys	Gln	Ala	Tyr	Ser	Glu	Arg	Pro	Asn	Arg	355	360	365
Leu	Leu	Arg	Arg	Arg	Val	Val	Val	Asp	Val	Gln	Pro	Ser	Asp	Ser	Gly	370	375	380
Leu	Pro	Ser	Glu	Ser	Gly	Pro	Ser	Ser	Gly	Val	Pro	Gly	Pro	Gly	Arg	385	390	395
Leu	Pro	Leu	Arg	Asn	Gly	Arg	Val	Ala	His	Gln	Asp	Gly	Pro	Gly	Glu	405	410	415

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 <212> DNA
 <213> Homo sapiens

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 gccatgttca ttgtggccta tgcgctcatc ttctgtctct gcatggtggg caacaccctg 180
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<210> 4
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 <212> PRT
 <213> Homo sapiens

<400> 4
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 20 25 30
 Tyr Gln His Thr Ser Pro Val Ala Ala Met Phe Ile Val Ala Tyr Ala
 35 40 45
 Leu Ile Phe Leu Leu Cys Met Val Gly Asn Thr Leu Val Cys Phe Ile
 50 55 60
 Val Leu
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<210> 5
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 <212> DNA
 <213> Homo sapiens

<400> 5

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aatattacct atgtgaacta ctatcttcac cagcctcaag tggcagcaat cttcattatt 180
tcctactttc tgatcttctt tttgtgcatg atgggaaata ctgtggtttg ctttattgta 240
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gatttactag ttggcatatt ctgcatgcct ataacactgc tggacaatat tatagcagga 360
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<210> 6

<211> 420

<212> PRT

<213> Homo sapiens

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Trp Asn Val Asn Asp Thr Lys His His Leu Tyr Ser Asp Ile Asn Ile
      20              25              30

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Thr Tyr Val Asn Tyr Tyr Leu His Gln Pro Gln Val Ala Ala Ile Phe
      35              40              45

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Ile Ile Ser Tyr Phe Leu Ile Phe Phe Leu Cys Met Met Gly Asn Thr
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Val Val Cys Phe Ile Val Met Arg Asn Lys His Met His Thr Val Thr
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Asn Leu Phe Ile Leu Asn Leu Ala Ile Ser Asp Leu Leu Val Gly Ile
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Phe Gly Asn Thr Met Cys Lys Ile Ser Gly Leu Val Gln Gly Ile Ser
 115 120 125

Val Ala Ala Ser Val Phe Thr Leu Val Ala Ile Ala Val Asp Arg Phe
 130 135 140

Gln Cys Val Val Tyr Pro Phe Lys Pro Lys Leu Thr Ile Lys Thr Ala
 145 150 155 160

Phe Val Ile Ile Met Ile Ile Trp Val Leu Ala Ile Thr Ile Met Ser
 165 170 175

Pro Ser Ala Val Met Leu His Val Gln Glu Glu Lys Tyr Tyr Arg Val
 180 185 190

Arg Leu Asn Ser Gln Asn Lys Thr Ser Pro Val Tyr Trp Cys Arg Glu
 195 200 205

Asp Trp Pro Asn Gln Glu Met Arg Lys Ile Tyr Thr Thr Val Leu Phe
 210 215 220

Ala Asn Ile Tyr Leu Ala Pro Leu Ser Leu Ile Val Ile Met Tyr Gly
 225 230 235 240

Arg Ile Gly Ile Ser Leu Phe Arg Ala Ala Val Pro His Thr Gly Arg
 245 250 255

Lys Asn Gln Glu Gln Trp His Val Val Ser Arg Lys Lys Gln Lys Ile
 260 265 270

Ile Lys Met Leu Leu Ile Val Ala Leu Leu Phe Ile Leu Ser Trp Leu
 275 280 285

Pro Leu Trp Thr Leu Met Met Leu Ser Asp Tyr Ala Asp Leu Ser Pro
 290 295 300

Asn Glu Leu Gln Ile Ile Asn Ile Tyr Ile Tyr Pro Phe Ala His Trp
 305 310 315 320

Leu Ala Phe Gly Asn Ser Ser Val Asn Pro Ile Ile Tyr Gly Phe Phe
 325 330 335

Asn Glu Asn Phe Arg Arg Gly Phe Gln Glu Ala Phe Gln Leu Gln Leu
 340 345 350

Cys Gln Lys Arg Ala Lys Pro Met Glu Ala Tyr Ala Leu Lys Ala Lys
 355 360 365

Ser His Val Leu Ile Asn Thr Ser Asn Gln Leu Val Gln Glu Ser Thr
 370 375 380

Phe Gln Asn Pro His Gly Glu Thr Leu Leu Tyr Arg Lys Ser Ala Glu
 385 390 395 400

Lys Pro Gln Gln Glu Leu Val Met Glu Glu Leu Lys Glu Thr Thr Asn
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Ser Ser Glu Ile
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 aacaccctgg tctgtttcat cgtgctcaag aaccggcaca tgcatactgt caccaacatg 240
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<212> PRT

<213> Homo sapiens

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Ser Ser Tyr Tyr Gln His Thr Ser Pro Val Ala Ala Met Phe Ile Val
35 40 45

Ala Tyr Ala Leu Ile Phe Leu Leu Cys Met Val Gly Asn Thr Leu Val
50 55 60

Cys Phe Ile Val Leu Lys Asn Arg His Met His Thr Val Thr Asn Met
65 70 75 80

Phe Ile Leu Asn Leu Ala Val Ser Asp Leu Leu Val Gly Ile Phe Cys
85 90 95

Met Pro Thr Thr Leu Val Asp Asn Leu Ile Thr Gly Trp Pro Phe Asp
100 105 110

Asn Ala Thr Cys Lys Met Ser Gly Leu Val Gln Gly Met Ser Val Ser
115 120 125

Ala Ser Val Phe Thr Leu Val Ala Ile Ala Val Glu Arg Phe Arg Cys
130 135 140

Ile Val His Pro Phe Arg Glu Lys Leu Thr Leu Arg Lys Ala Leu Val
145 150 155 160

Thr Ile Ala Val Ile Trp Ala Leu Ala Leu Leu Ile Met Cys Pro Ser
165 170 175

Ala Val Thr Leu Thr Val Thr Arg Glu Glu His His Phe Met Val Asp
180 185 190

Ala Arg Asn Arg Ser Tyr Pro Leu Tyr Ser Cys Trp Glu Ala Trp Pro
195 200 205

Glu Lys Gly Met Arg Arg Val Tyr Thr Thr Val Leu Phe Ser His Ile
210 215 220

Tyr Leu Ala Pro Leu Ala Leu Ile Val Val Met Tyr Ala Arg Ile Ala
225 230 235 240

Arg	Lys	Leu	Cys	Gln	Ala	Pro	Gly	Pro	Ala	Pro	Gly	Gly	Glu	Glu	Ala
				245					250					255	
Ala	Asp	Pro	Arg	Ala	Ser	Arg	Arg	Arg	Ala	Arg	Val	Val	His	Met	Leu
			260					265					270		
Val	Met	Val	Ala	Leu	Phe	Phe	Thr	Leu	Ser	Trp	Leu	Pro	Leu	Trp	Ala
		275					280					285			
Leu	Leu	Leu	Leu	Ile	Asp	Tyr	Gly	Gln	Leu	Ser	Ala	Pro	Gln	Leu	His
	290					295					300				
Leu	Val	Thr	Val	Tyr	Ala	Phe	Pro	Phe	Ala	His	Trp	Leu	Ala	Phe	Phe
305					310					315					320
Asn	Ser	Ser	Ala	Asn	Pro	Ile	Ile	Tyr	Gly	Tyr	Phe	Asn	Glu	Asn	Phe
				325					330					335	
Arg	Arg	Gly	Phe	Gln	Ala	Ala	Phe	Arg	Ala	Arg	Leu	Cys	Pro	Arg	Pro
			340					345					350		
Ser	Gly	Ser	His	Lys	Glu	Ala	Tyr	Ser	Glu	Arg	Pro	Gly	Gly	Leu	Leu
		355					360					365			
His	Arg	Arg	Val	Phe	Val	Val	Val	Arg	Pro	Ser	Asp	Ser	Gly	Leu	Pro
	370					375					380				
Ser	Glu	Ser	Gly	Pro	Ser	Ser	Gly	Ala	Pro	Arg	Pro	Gly	Arg	Leu	Pro
385					390					395					400
Leu	Arg	Asn	Gly	Arg	Val	Ala	His	His	Gly	Leu	Pro	Arg	Glu	Gly	Pro
				405					410					415	
Gly	Cys	Ser	His	Leu	Pro	Leu	Thr	Ile	Pro	Ala	Trp	Asp	Ile		
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<213> Artificial Sequence

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23

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<210> 13
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26

<210> 14

<211> 26

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

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<210> 15

<211> 24

<212> DNA

<213> Artificial Sequence

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<211> 60

<212> DNA

<213> Artificial Sequence

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<211> 53

<212> DNA

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<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 18

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<210> 19

<211> 21

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

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<210> 20

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<212> DNA

<213> Artificial Sequence

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<211> 24

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

<400> 21

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24

<210> 22

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24

<210> 23

<211> 24

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

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24

<210> 24

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<212> DNA

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<400> 24

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<210> 25

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<210> 29

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<212> DNA

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<223> Description of Artificial Sequence: primer/probe

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27

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<211> 23

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<213> Artificial Sequence

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23

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<212> DNA

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<223> Description of Artificial Sequence: primer/probe

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tgatagtgag ctttggttta aaaggg

26

<210> 32

<211> 26

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<210> 33

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<210> 34

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<212> DNA

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<223> Description of Artificial Sequence: primer/probe

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<210> 35

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<212> DNA

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24

<210> 36

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25

<210> 37

<211> 37

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 37

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<210> 38

<211> 36

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

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36

<210> 39

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<223> Description of Artificial Sequence: primer/probe

<400> 39

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24

<210> 40

<211> 19

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

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19

<210> 41

<211> 27

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 41

gatcagtgga ttggtccagg gaatatc

27

<210> 42

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

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25

<210> 43

<211> 1334

<212> DNA

<213> Rattus norvegicus

<400> 43

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tagaaaaagt gcagacaatc ccacacagga atccttgatg gaggaaacgg gagaagctac 1260

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aactccgatg qctg 1334
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<210> 44
<211> 417
<212> PRT
<213> Rattus norvegicus
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<400> 44
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Trp Ser Gly Asn Asp Thr Gln His Pro Trp Tyr Ser Asp Ile Asn Ile
      20              25              30

Thr Tyr Met Asn Tyr Tyr Leu His Gln Pro His Val Thr Ala Val Phe
      35              40              45

Ile Ser Ser Tyr Phe Leu Ile Phe Phe Leu Cys Met Val Gly Asn Thr
      50              55              60

Val Val Cys Phe Val Val Ile Arg Asn Arg Tyr Met His Thr Val Thr
  65              70              75              80

Asn Phe Phe Ile Phe Asn Leu Ala Ile Ser Asp Leu Leu Val Gly Ile
      85              90              95

Phe Cys Met Pro Ile Thr Leu Leu Asp Asn Ile Ile Ala Gly Trp Pro
      100             105             110

Phe Gly Ser Ser Met Cys Lys Ile Ser Gly Leu Val Gln Gly Ile Ser
      115             120             125

Val Ala Ala Ser Val Phe Thr Leu Val Ala Ile Ala Val Asp Arg Phe
  130             135             140

Arg Cys Val Val Tyr Pro Phe Lys Pro Lys Leu Thr Val Lys Thr Ala
145             150             155             160

Phe Val Met Ile Val Ile Ile Trp Gly Leu Ala Ile Thr Ile Met Thr
      165             170             175

Pro Ser Ala Ile Met Leu His Val Gln Glu Glu Lys Tyr Tyr Arg Val
      180             185             190

Arg Leu Ser Ser His Asn Lys Thr Ser Thr Val Tyr Trp Cys Arg Glu
      195             200             205

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Asp Trp Pro Asn Gln Glu Met Arg Arg Ile Tyr Thr Thr Val Leu Phe
 210 215 220

Ala Thr Ile Tyr Leu Ala Pro Leu Ser Leu Ile Val Ile Met Tyr Ala
 225 230 235 240

Arg Ile Gly Ala Ser Leu Phe Lys Thr Ser Ala His Ser Thr Gly Lys
 245 250 255

Gln Arg Leu Glu Gln Trp His Val Ser Lys Lys Lys Gln Lys Val Ile
 260 265 270

Lys Met Leu Leu Thr Val Ala Leu Leu Phe Ile Leu Ser Trp Leu Pro
 275 280 285

Leu Trp Thr Leu Met Met Leu Ser Asp Tyr Ala Asp Leu Ser Pro Asn
 290 295 300

Lys Leu Arg Val Ile Asn Ile Tyr Val Tyr Pro Phe Ala His Trp Leu
 305 310 315 320

Ala Phe Cys Asn Ser Ser Val Asn Pro Ile Ile Tyr Gly Phe Phe Asn
 325 330 335

Glu Asn Phe Arg Ser Gly Phe Gln Asp Ala Phe Gln Phe Cys Gln Lys
 340 345 350

Lys Val Lys Pro Gln Glu Ala Tyr Gly Leu Arg Ala Lys Arg Asn Leu
 355 360 365

Asp Ile Asn Thr Ser Gly Leu Leu Val His Glu Pro Ala Ser Gln Asn
 370 375 380

Pro Ser Gly Glu Asn Leu Gly Cys Arg Lys Ser Ala Asp Asn Pro Thr
 385 390 395 400

Gln Glu Ser Leu Met Glu Glu Thr Gly Glu Ala Thr Asn Ser Thr Glu
 405 410 415

Thr

<210> 45

<211> 8

<212> PRT

<213> Rattus norvegicus

<400> 45

Phe Leu Phe Gln Pro Gln Arg Phe

1

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5

10

15

Arg Phe

<210> 47

<211> 24

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

<400> 47

tttgtcatta ttatgatcat ctgg

24

<210> 48

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 48

aataaaaagc agggccacaa tcag

24

<210> 49

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 49

tcattatttc ctactttctg atc

23

<210> 50

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 50

ctcatttcct ggtttgcca atcc

24

<210> 51

<211> 23

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

<400> 51

tcttcaagac ctcagcacac agc

23

<210> 52

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 52

gagctggaaa gcttcttgga aacc

24

<210> 53

<211> 49

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 53

ctggtgtcgg gaggattggc caaaccagga aatgaggagg atctacacc

49

<210> 54

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 54

gcagtgtcaa ccccatcatt tatgg

25

<210> 55

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

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caaagcaaac gacagtgttt cccacc

26

<210> 56

<211> 26

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

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agtgaccgtg tgcattgacc tattcc

26

<210> 57

<211> 60

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 57

ggtgggaaac actgtcgttt gctttgttgt aataaggaat aggtacatgc acacgggtcac 60

<210> 58

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 58

gtcacggatc cagcctctcc ttgataagg tccacc

36

<210> 59

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 59

gtcagccatc gagttggctt cgtatgctat ataacattgg atagc

45

<210> 60

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 60

ctggtcaccg tctacgcctt

20

<210> 61

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 61

ccgcgcgcgga agttct

16

<210> 62

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 62

acagcagcgc caaccccatc at

22

<210> 63

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 63

cctgattgtg gccctgct

18

<210> 64

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 64

catttgagga aaggtcagcg tag

23

<210> 65

<211> 26

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 65

ctcatggctg cccctgtgga ctcaat

26

<210> 66

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 66

gctgtggaaa ggttccgct

19

<210> 67

<211> 17

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

<400> 67

cgccttccga aggggtca

17

<210> 68

<211> 23

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

<400> 68

atcgtgcacc ctttccgcga gaa

23

<210> 69

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 69

gaggatctac accaccgtgc tatt

24

<210> 70

<211> 21

<212> DNA

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<223> Description of Artificial Sequence: primer/probe

<400> 70

gaagccccaa tccttgcata c

21

<210> 71

<211> 29

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 71

tctacctggc tccactctcc ctcattggt

29